

**Beaumont Fire-Rescue Services**

**PERFORMANCE BENCHMARKS**

**404.03A -**

**Routine Inspection, Maintenance & Documentation of Aerial Apparatus**

**Discipline:** Driver/Operator

**Effective:** 12/5/2010

**Revised:**

**Replaces:**

*Anne Huff, Fire Chief*

**I. Objective**

The Driver/Operator shall perform routine tests, inspections, and service functions that are required to assure the operational status of fire department aerial apparatus and shall properly document his/her actions on the provided form.

**II. Instructions – Procedures for Achieving the Objective**

The Driver/Operator shall follow a given equipment check list (printed at the end of the Benchmark form) to perform routine tests, inspections, and service functions on the systems and components specified in the following list, given a fire department aerial vehicle, and the vehicles manufacturer specifications, so that the operational status of the vehicle is verified. The Driver/Operator shall document the routine tests, inspections, and servicing functions, given maintenance and inspection forms, so that all items are checked for operation and deficiencies are reported. The Driver/Operator is to be judged on whether or not he/she can successfully complete each step of the inspection and document the process.

**III. Examiner's Note**

The Driver/Operator will use the equipment check list at the time of the evaluation, but will not allowed to see the actual performance evaluation sheet during the test.

**IV. Preparation & Equipment**

- A. Appropriate safety equipment (gloves, eye and ear protection, etc.)
- B. Fire department aerial vehicle
- C. Tools and equipment
- D. Policies and procedures
- E. Equipment check list

**V. Reference Sources**

- A. IFSTA, Aerial Apparatus Driver/Operator Handbook, 2<sup>nd</sup> Edition
- B. NFPA 1002 4.2.1, 4.2.2, 6.1.1

## 404.03A – Routine Inspections, Maintenance and Documentation of Aerial Apparatus

Discipline: D/O

Name:		Officer #:
Evaluator:		Officer #:
Date:	Unit:	Location:

### **Skill #1: Aerial Apparatus Basic Inspection Checklist**

***The Driver/Operator: (No partial points given)***

#### **Battery/Batteries**

- A. Checks water level, if applicable..... 1.0 \_\_\_\_\_
- B. Checks tightness of terminals with appropriate hand tool..... 1.0 \_\_\_\_\_
- C. Inspects terminals for corrosion..... 1.0 \_\_\_\_\_
- D. Evaluates general condition (damage, tie downs)..... 1.0 \_\_\_\_\_

#### **Braking System**

- A. Air-Actuated Brakes
  - 1. Checks for leaks..... **P/F** \_\_\_\_\_
  - 2. Ensures manual or automatic purging of excess condensation..... **P/F** \_\_\_\_\_
  - 3. Confirms braking system meets adequate requirements for air pressure recovery ..... 1.0 \_\_\_\_\_
- B. Hydraulic brakes
  - 1. Checks for leaks..... **P/F** \_\_\_\_\_
  - 2. Ensures hydraulic fluid level is within manufacturer's recommended specifications..... **P/F** \_\_\_\_\_

#### **Fluid System**

- A. Coolant System
  - 1. Checks for leaks..... **P/F** \_\_\_\_\_
  - 2. Checks condition of hoses and/or lines..... 1.0 \_\_\_\_\_
  - 3. Ensures coolant level is within manufacturer's recommended specifications..... 1.0 \_\_\_\_\_
- B. Hydraulic Fluids
  - 1. Checks for leaks..... **P/F** \_\_\_\_\_
  - 2. Ensures hydraulic fluid level was within manufacturers Recommended specifications..... **P/F** \_\_\_\_\_
- C. Oil
  - 1. Checks for leaks..... **P/F** \_\_\_\_\_
  - 2. Ensures engine oil level..... **P/F** \_\_\_\_\_

3. Ensures general oil pressure is within manufacturers recommended specifications..... P/F \_\_\_\_\_
- D. Fuel
  1. Verbally reports fuel gauge level ..... 1.0 \_\_\_\_\_
  2. Checks for leaks..... P/F \_\_\_\_\_

### **Electrical System**

- A. Electrical system
  1. Ensures charging system is operational..... P/F \_\_\_\_\_
  2. Confirms gauges are functioning..... P/F \_\_\_\_\_
  3. Checks ignition system by starting engine (engine oil check must be performed prior to this step)..... P/F \_\_\_\_\_
  4. Ensures all vehicle lights are operational..... 1.0 \_\_\_\_\_
  5. Ensures all visual and audible emergency warning devices are operational..... P/F \_\_\_\_\_
- B. Checks for computerized system problems..... P/F \_\_\_\_\_

### **Tires, Belts & Steering System**

- A. Tires
  1. Checks condition of valve and stem..... 1.0 \_\_\_\_\_
  2. Evaluates condition of tire tread..... P/F \_\_\_\_\_
  3. Checks depth of tire treads..... 1.0 \_\_\_\_\_
  4. Checks for damage..... P/F \_\_\_\_\_
  5. Uses an air gauge, to ensure that tire air pressure was within manufacturer's recommended specifications..... P/F \_\_\_\_\_
  6. Checks lug nuts for tightness, rust and missing nuts..... P/F \_\_\_\_\_
- B. Steering system
  1. Checks for leaks..... P/F \_\_\_\_\_
  2. Ensures steering fluid was within manufacturer's recommended specifications..... P/F \_\_\_\_\_
  3. Checks for "excessive play" in steering wheel..... 1.0 \_\_\_\_\_
- C. Drive Belts
  1. Ensures proper adjustment..... 1.0 \_\_\_\_\_
  2. Checks for excessive wear and/or cracking..... P/F \_\_\_\_\_

### **Equipment and Safety**

- A. Ensures required tools, appliances, and equipment are in good Working order..... 1.0 \_\_\_\_\_
- B. Verifies Safety Equipment and seat belts..... P/F \_\_\_\_\_
- C. Corrects any deficiency noted according to policies and procedures..... 1.0 \_\_\_\_\_

Points Possible	Passing Score	Attempt	Performance Rating (Points)	PASS	FAIL
16	12	First			
		Second			
		Third			

## Skill # 2: Aerial Device Operational Readiness Checklist

**The Driver/Operator: (No partial points given)**

- A. Insures water tank level is full..... **P/F** \_\_\_\_\_
- B. Checks primer pump oil reservoir level, if applicable..... 1.0 \_\_\_\_\_
- C. Checks foam tank level, if applicable..... **P/F** \_\_\_\_\_
- D. Evaluates condition of the pump packing for leaking..... 1.0 \_\_\_\_\_
- E. Properly engages pump..... **P/F** \_\_\_\_\_
- F. Properly operates priming system..... **P/F** \_\_\_\_\_
- G. Demonstrates proper throttle operation..... **P/F** \_\_\_\_\_
- H. Correctly operates discharge valves..... **P/F** \_\_\_\_\_
- I. correctly operates drain valves ..... 1.0 \_\_\_\_\_
- J. Operates change-over valve (for two-stage pumps)..... **P/F** \_\_\_\_\_
- K. Operates pressure control device..... **P/F** \_\_\_\_\_
- L. Verbalizes correct procedure for providing foam, if equipped..... **P/F** \_\_\_\_\_
- M. Properly disengages pump..... **P/F** \_\_\_\_\_
- N. Ensures tightness of screws and bolts on pump panel, using  
appropriate hand tools ..... 1.0 \_\_\_\_\_
- O. verbalizes corrective actions for system problems..... 1.0 \_\_\_\_\_
- P. Corrects any deficiency noted according to policies and procedures..... 1.0 \_\_\_\_\_

Points Possible	Passing Score	Attempt	Performance Rating (Points)	PASS	FAIL
6	4	First			
		Second			
		Third			

### **Skill #3: Aerial Device Visual Inspection**

***The Driver/Operator: (No partial points given)***

- A. Checks the level of the aerial device hydraulic fluid in the aerial device hydraulic system..... 1.0\_\_\_\_\_
- B. Visually inspects the stabilizers..... 1.0\_\_\_\_\_
- C. Inspects turntable assembly..... 1.0\_\_\_\_\_
- D. Inspects lower control pedestal..... 1.0\_\_\_\_\_
- E. Inspects platform control console..... 1.0\_\_\_\_\_
- F. Inspects aerial device communications system..... 1.0\_\_\_\_\_
- G. Checks status of the breathing air supply system (if equipped))..... 2.0\_\_\_\_\_
- H. Inspects the aerial device extension/retraction system..... 1.0\_\_\_\_\_
- I. Inspects the elevating/lifting cylinders..... 1.0\_\_\_\_\_
- J. Inspects the elevating platform..... 1.0\_\_\_\_\_
- K. Inspects ladder rungs for any visible damage or problems..... 1.0\_\_\_\_\_
- L. Inspects ladder pipe for any visible damage or problems..... 1.0\_\_\_\_\_
- M. Inspects any devices attached to the end of the aerial device fly section..... 1.0\_\_\_\_\_

Points Possible	Passing Score	Attempt	Performance Rating (Points)	PASS	FAIL
14	10	First			
		Second			
		Third			

#### **Skill #4: Aerial Device Operational Check**

***The Driver/Operator: (No partial points given)***

- A. Positions apparatus in suitable location for aerial device operations..... **P/F** \_\_\_\_\_
- B. Correctly transfers power from the drive train to aerial device hydraulics system..... 1.0 \_\_\_\_\_
- C. Check operation of the stabilizers..... 1.0 \_\_\_\_\_
- D. Checks for smooth operation as the aerial ladder is raised, extended and retracted ..... 1.0 \_\_\_\_\_
- E. Inspects the turntable for smooth operation noting any hydraulic leaks or unusual sounds..... 1.0 \_\_\_\_\_
- F. Checks manual ladder locking device (if equipped)..... 1.0 \_\_\_\_\_
- G. Tests operation of auxiliary equipment on the aerial device..... 1.0 \_\_\_\_\_
- H. Stows aerial device and stabilizers..... **P/F** \_\_\_\_\_

Points Possible	Passing Score	Attempt	Performance Rating (Points)	PASS	FAIL
6	4	First			
		Second			
		Third			

## **Aerial Apparatus Basic Inspection Checklist**

### **Battery/Batteries**

- A. Check water level, if applicable.....
- B. Check tightness of terminals with appropriate hand tool .....
- C. Inspect terminals for corrosion .....
- D. Evaluate general condition (damage, tie downs) .....

### **Braking System**

- A. Air-Actuated Brakes
  - 1. Check for leaks.....
  - 2. Ensure manual or automatic purging of excess condensation....
  - 3. Confirm braking system meets adequate requirements for air pressure recovery.....
- B. Hydraulic brakes
  - 1. Check for leaks.....
  - 2. Ensure hydraulic fluid level is within manufacturers recommended specifications.....

### **Fluid System**

- A. Coolant System
  - 1. Check for leaks.....
  - 2. Check condition of hoses and/or lines.....
  - 3. Ensure coolant level is within manufacturers recommended specifications .....
- B. Hydraulic Fluids
  - 1. Check for leaks.....
  - 2. Ensure hydraulic fluid level was within manufacturers Recommended specifications.....
- C. Oil
  - 1. Check for leaks.....
  - 2. Ensure engine oil level.....
  - 3. Ensure general oil pressure is within manufacturers Recommended specifications.....
- D. Fuel
  - 1. Verbally report fuel gauge level .....
  - 2. Check for leaks.....

### **Electrical System**

- A. Electrical system
  - 1. Ensure charging system is operational.....
  - 2. Confirm gauges are functioning.....
  - 3. Check ignition system by starting engine (engine oil check must be performed prior to this step).....
  - 4. Ensure all vehicle lights are operational.....

5. Ensure all visual and audible emergency warning devices are operational.....
- B. Check for computerized system problems.....

### **Tires, Belts & Steering System**

- A. Tires
  1. Check condition of valve and stem.....
  2. Evaluate condition of tire tread.....
  3. Check depth of tire treads .....
  4. Check for damage.....
  5. Use an air gauge, to ensure that tire air pressure was within manufacturer's recommended specifications.....
  6. Check lug nuts for tightness, rust and missing nuts.....
- B. Steering system
  1. Check for leaks.....
  2. Ensure steering fluid was within manufacturers recommended specifications.....
  3. Check for "excessive play" in steering wheel.....
- C. Drive Belts
  1. Ensure proper adjustment.....
  2. Check for excessive wear and/or cracking.....

### **Equipment, Safety & Documentation**

- A. Ensure required tools, appliances, and equipment are in good working order.....
- B. Verify safety equipment and seat belts.....
- C. Correct any deficiency noted according to policies and procedures.....

### **Aerial Device Visual Inspection Checklist**

- A. Checks the level of the aerial device hydraulic fluid in the aerial device hydraulic system.....
- B. Visually inspect the stabilizers.....
- C. Inspect turntable assembly.....
- D. Inspect lower control pedestal.....
- E. Inspect platform control console.....
- F. Inspect aerial device communications system.....
- G. Check status of the breathing air supply system (if equipped).....
- H. Inspect the aerial device extension/retraction system.....
- I. Inspect the elevating/lifting cylinders.....
- J. Inspect the elevating platform.....
- K. Inspect ladder rungs for any visible damage or problems.....
- L. Inspect ladder pipe for any visible damage or problems.....
- M. Inspect any devices attached to the end of the aerial device fly section....



### **Aerial Device Operational Readiness Checklist**

- A. Ensure water level in tank is full.....
- B. Check primer pump oil reservoir level, if applicable.....
- C. Check foam tank level, if applicable.....
- D. Evaluate condition of the pump packing for leaking.....
- E. Properly engage pump.....
- F. Properly operate priming system.....
- G. Demonstrate proper throttle operation.....
- H. Correctly operate discharge valves.....
- I. Correctly operate drain valves .....
- J. Operate change-over valve (for two-stage pumps).....
- K. Operate pressure control device.....
- L. Verbalize correct procedure for providing foam, if equipped.....
- M. Properly disengage pump.....
- N. Ensure tightness of screws and bolts on pump panel using appropriate hand tools .....
- O. Verbalize corrective actions for system problems.....
- P. Correct any deficiency noted according to policies and procedures.....

### **Aerial Device Operational Checklist**

- A. Position apparatus in suitable location for aerial device operations.....
- B. Correctly transfer power from the drive train to aerial device hydraulic system.....
- C. Check operation of the stabilizers.....
- D. Check for smooth operation as the aerial ladder is raised, extended and retracted.....
- E. Inspect the turntable for smooth operation noting any hydraulic leaks or unusual sounds.....
- F. Check manual ladder locking device (if equipped).....
- G. Test operation of auxiliary equipment on the aerial device.....
- H. Stow aerial device and stabilizers.....